

Victorian Certificate of Education 2007

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures											
Words											

Letter

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PSYCHOLOGY

Written examination 1

Wednesday 13 June 2007

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Area of study	Number of questions	Number of questions to be answered	Number of marks
A	1. Brain and nervous system	18	18	18
	2. Visual perception	13	13	13
	3. States of consciousness	13	13	13
B	1. Brain and nervous system	6	6	18
	2. Visual perception	5	5	14
	3. States of consciousness	5	5	14
Total				90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 19 pages.
- Answer sheet for multiple-choice questions.

Instructions

- Write your student number in the space provided above on this page.
- Check that your name and student number as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer all questions in pencil on the answer sheet provided for multiple-choice questions. Choose the response that is correct or that best answers the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will not be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

AREA OF STUDY 1 – Brain and nervous system

Question 1

Which parts of the body are coordinated by the largest area of the somatosensory cortex?

- torso and legs
- feet and legs
- feet and hands
- hands and face

Question 2

Which statement relating to the cerebral cortex is incorrect?

- The cerebral cortex is approximately 3 mm thick.
- The wrinkled nature of the cerebral cortex decreases its surface area.
- The cerebral cortex covers most of the forebrain.
- The cerebral cortex is divided into 4 lobes.

Question 3

Visual information is first transmitted to the _____ for processing.

- primary visual cortex
- association areas
- primary auditory cortex
- secondary visual cortex

Question 4

Visual information received by the right eye is processed in the

- parietal lobe of the left hemisphere only.
- occipital lobe of the left hemisphere only.
- parietal lobe of right and left hemispheres.
- occipital lobe of right and left hemispheres.

Question 5

For most people, a function that is performed mainly by the right hemisphere is

- controlling speech.
- receiving and processing sensations from the right side of the body.
- detecting emotions.
- evaluating problems.

Question 6

Lee is reading his psychology text book.

Which part of the brain plays the most crucial role in helping him **comprehend** what is written?

- A. Broca's area
- B. Wernicke's area
- C. occipital lobe
- D. parietal lobe

Question 7

Planning, reasoning and logical thinking are major functions of the _____ lobe.

- A. temporal
- B. occipital
- C. parietal
- D. frontal

Question 8

The brain stimulation method usually involves a _____ electrical current to be applied to a _____ in the brain.

- A. weak; specific location
- B. strong; specific location
- C. weak; general region
- D. strong; general region

Question 9

One disadvantage of using an electroencephalograph (EEG) to investigate the brain is that

- A. it cannot be used with a range of patients such as infants.
- B. it is invasive.
- C. it does not provide detailed information about brain function compared to positron emission tomography (PET).
- D. it is expensive compared to functional magnetic resonance imaging (fMRI).

Question 10

Which of the following is **incorrect** about computerised tomography (CT) scans?

- A. CT scans provide information about the function and extent of damage to the brain.
- B. The risks to the patient associated with CT scans are negligible.
- C. CT scans usually require an injection into the bloodstream.
- D. CT scans use X-rays taken at various angles to create an image of the brain.

Question 11

The functional magnetic resonance imaging (fMRI) scan provides a detailed image of the brain.

It works on the knowledge that

- A. blood flow to the brain is decreased when it is active.
- B. radioactive dyes stimulate brain activity.
- C. active brain neurons are easier to photograph.
- D. more oxygen is required by active brain neurons.

Question 12

Our voluntary movements are controlled through

- A. the autonomic nervous system.
- B. the muscular nervous system.
- C. the sympathetic nervous system.
- D. the somatic nervous system.

Question 13

The central nervous system (CNS) consists of

- A. the somatic and autonomic nervous systems.
- B. the brain and spinal cord.
- C. the brain and vertebrae.
- D. the brain and somatic nervous system.

Question 14

Your heart keeps beating even though you may be unconscious because the autonomic nervous system (ANS) is

- A. self-regulating and not dependent on voluntary control by the brain.
- B. self-regulating and not dependent on involuntary control by the brain.
- C. mainly controlled by the motor cortex.
- D. mainly controlled by the cerebral cortex.

Question 15

When using a polygraph as a lie detector, control questions are used to establish a baseline response.

Control questions are

- A. simple non-emotional questions.
- B. simple emotional questions.
- C. emotional questions that require in-depth responses.
- D. a mixture of non-emotional and emotional questions.

Question 16

A major limitation of using a polygraph as a lie detector is that

- A. physiological changes associated with guilt are different from those associated with fear and anxiety.
- B. similar physiological responses occur with different emotions.
- C. a lie can be detected as the truth if a person self-induces pain during a relevant question.
- D. people with naturally low physiological arousal levels are often detected as lying despite telling the truth.

Question 17

A stressful experience

- A. is subjective in nature.
- B. is caused only by external events.
- C. is accurately measured by self-report.
- D. is never desirable.

Question 18

Paul is undergoing tests related to seizures he has experienced. Paul is informed that, while he is undergoing the tests, the doctor would like to carry out some non-invasive and harmless research on Paul's brain for a research project.

Before the doctor carries out the research he must

- A. get other patients to also participate in the study.
- B. get approval by the ethics committee.
- C. debrief the patient.
- D. get consent by asking the patient to nod his head in agreement.

AREA OF STUDY 3 – States of consciousness**Question 32**

Which of the following descriptions of human consciousness is most accurate?

- A. awareness of the world around us and ourselves, including thoughts and feelings
- B. knowledge of events taking place in the world
- C. being able to understand and express our thoughts, feelings and knowledge of the world
- D. awareness of different situations that may cause an altered state of consciousness

Question 33

Loula has been knitting for 20 years and often knits while watching television. While knitting the basic pattern she mostly uses _____ but knitting a complex pattern mostly involves _____.

- A. selective attention; focused attention
- B. automatic processing; controlled processing
- C. controlled processing; focused attention
- D. divided attention; automatic processing

Question 34

Fiona has two young toddlers and works from home. She is able to concentrate on her computer work and 'shut out' the noise of her children playing.

This shows that Fiona is most likely using

- A. controlled consciousness.
- B. divided attention.
- C. automatic focusing.
- D. selective attention.

Question 35

Which of the following methods is **unlikely** to be used to determine different states of consciousness?

- A. self-report
- B. computerised tomography (CT) scan
- C. heart rate
- D. body temperature

Question 36

Some friends are having a sleepover. It is midnight but Julie is still very excited and chatty. Yasmin, however, is very tired and about to fall asleep. Sasha has already been asleep for 30 minutes. Of these three girls, it is most likely that at this moment _____ will have the **highest frequency** brainwaves, and _____ will have the **highest amplitude** brainwaves.

- A. Sasha; Julie
- B. Yasmin; Sasha
- C. Sasha; Yasmin
- D. Julie; Sasha

Question 37

Research into sleep patterns indicates that the number of episodes spent in rapid eye movement (REM) sleep per night is typically around

- A. two.
- B. three.
- C. four to five.
- D. seven to eight.

Question 38

Hypnic jerks are

- A. more commonly known as sleep spindles.
- B. more likely to occur in REM sleep.
- C. an indicator that a person is dreaming.
- D. more likely to occur in Stage 1 sleep.

Question 39

Dreams in non-rapid eye movement (NREM) sleep

- A. tend to be short-lived compared to REM dreams.
- B. tend to be longer compared to REM dreams.
- C. tend to be more vivid compared to REM dreams.
- D. do not occur.

Question 40

Sleep spindles are typically characterised by

- A. brief bursts of high amplitude.
- B. brief bursts of high frequency.
- C. a single surge of high amplitude.
- D. a single surge of high frequency.

Question 41

After going without sleep for 4 days, a person is most likely to

- A. find it very difficult to get to sleep.
- B. suffer long-term physiological effects.
- C. sleep for 24 hours or more.
- D. suffer no long-term psychological effects.

Question 42

Lachlan works in a fruit-processing factory. His job is simply to look for fruit with marked skins and put them in a separate crate.

If he has gone without sleep for several days, he is most likely to

- A. continue working efficiently as the task is not difficult.
- B. sort the fruit as efficiently as usual but not listen as carefully to instructions.
- C. make more mistakes than usual in checking the fruit for marked skins.
- D. work faster than usual as he is concentrating more because he knows he is tired.

Question 43

A person is most likely to remember a

- A. nightmare.
- B. night terror.
- C. sleepwalking episode.
- D. sleep talking episode.

Question 44

A person diagnosed with hypersomnia is likely to

- A. easily wake after a full night's sleep.
- B. wake with difficulty after a full night's sleep.
- C. wake prematurely from sleep.
- D. take longer than 30 minutes to go back to sleep if they wake during sleep.

SECTION B – Short answer questions

Instructions for Section B

Answer all questions in the spaces provided.

AREA OF STUDY 1 – Brain and nervous system

Question 1

What is the main function of the corpus callosum?

1 mark

Question 2

Case studies are used in brain research. Outline one value and one limitation of using case studies for brain research.

Value _____

Limitation _____

2 marks

Question 3

Corey is undergoing a positron emission tomography (PET) scan. He is asked to perform some cognitive tasks during the PET scan.

a. What radioactive substance in the bloodstream is detected by the PET scan?

1 mark

b. What information about the functioning of the brain will the PET scan provide during the performance of the cognitive tasks?

1 mark

c. Name one other imaging technique that could be used to find out similar information to the PET scan.

1 mark

Question 4

Charlotte is diagnosed with Broca's aphasia.

a. Where is Broca's area located?

1 mark

b. Describe two ways in which her speech could be impaired.

1.

2.

2 marks

Question 5

Pauline was almost hit by a car when she ran across the road.

a. The survival response which prepares Pauline's body to deal with the immediate threat is called the _____.

The _____ branch of the autonomic nervous system is responsible for returning her body to homeostasis after this survival response.

2 marks

b. State one physiological change Pauline would initially experience during the survival response, and explain how this change might improve her chances of survival.

Physiological change _____

Explanation _____

2 marks

Question 6

Suzanne suffers a heart attack. Her husband blames this on a prolonged stressful environment she has experienced at work.
According to the general adaptation syndrome (GAS), there is a series of stages that we go through in response to a stressful situation.

- a. What is the name of the final stage of the GAS?

1 mark

- b. What are two psychological problems that Suzanne may have experienced that are associated with the final stage of the GAS?

1. _____

2. _____

2 marks

- c. Briefly explain how Suzanne's physiological arousal due to stress can both help and lead to problems.

2 marks

AREA OF STUDY 3 – States of consciousness

Question 12

An altered state of consciousness is different from normal waking consciousness in a number of ways.
Give an example of an altered state of consciousness and identify two psychological characteristics that could distinguish this example from normal waking consciousness.

Example _____

Characteristics

1. _____

2. _____

1 + 2 = 3 marks

Question 13

Galvanic skin response (GSR) can indicate an altered state of consciousness.
Archie is in an altered state of consciousness with heightened arousal. Compared to his normal state, how would his GSR reading be different and why?

2 marks

Question 14

A number of devices are often used to monitor sleep patterns in sleep clinics.
Name one of these devices, list what it measures, and clearly explain how its recordings can distinguish between rapid eye movement (REM) and non-rapid eye movement (NREM) sleep.

Name _____

Measure _____

Explanation _____

1 + 1 + 1 = 3 marks

Assessment Report

2007 Psychology GA 1: Written examination 1

Question 15

Mario has been attending a sleep clinic and has been told he has sleep apnea.

- a. What is sleep apnea?

1 mark

- b. The cause of Mario's sleep apnea needs to be determined before treatment can be considered. Outline two possible causes of his sleep apnea.

1. _____

2. _____

2 marks

Question 16

Tegan is planning to carry out a study that considers the effects of caffeine on sleep. She plans to have two independent groups of participants. One group will take a low dose of caffeine while the other will drink a high dose of caffeine.

Tegan does not want the participants to know to which group they have been allocated.

- a. Name and define the effect that could occur if participants knew to which group they had been allocated.

Name _____

Definition _____

2 marks

Tegan's study involves some deception.

- b. When is deception allowed according to ethical guidelines?

1 mark

GENERAL COMMENTS

Students generally performed well on the June 2007 examination, and the results were very comparable with examination 1 in previous years. However, the results for this examination indicated that there was a greater degree of discrimination amongst students.

In the multiple-choice section all three areas were well-answered. The mean score for both 'Visual perception' and 'Brain and nervous system' was 70 per cent. The best answered area was 'States of Consciousness', with a mean of 77 per cent, a very similar average to 2006.

As in previous years, students did not perform as well on the short answer questions, generally because of a lack of precision and completeness in descriptions and definitions, failure to refer to appropriate psychological information or failure to provide appropriate examples in their answers – even when the requirement for this was explicitly stated in the question. Students had the most difficulty with 'States of consciousness', achieving a mean score of 49 per cent. 'Visual perception' followed with a mean of 54 per cent, and 'Brain and nervous system' was answered the best, with a mean of 62 per cent.

Teachers had clearly instructed and directed students' attention to the key knowledge and skills in the *Psychology VCE Study Design*. In general, students demonstrated good knowledge and understanding of the curriculum, although, as in previous years, many did not achieve full marks because they failed to address all aspects of the questions in their answers. For example, when required to 'use an example to clearly explain' in Question 9, many answers contained only a generic description of how context influences visual perception.

Students need to read the short answer questions very carefully and then check their answer against the question's requirements. Highlighting the instructional terms (for example, 'outline', 'describe', 'explain', etc.) before planning a response is a good practice, and helps ensure that the answer addresses the question specifically and completely.

If a question provides a context for the response by presenting a specific scenario or example, it is essential that students refer to that specific scenario or example in their response. For example, in Question 7 students needed to refer to the features of the figure presented.

Short answer questions worth two marks generally require at least two key terms and/or pieces of information, while those worth one mark generally require one (or sometimes two) key terms and/or pieces of information. Questions worth three or four marks have an appropriate number of lines for the answer.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

Students should answer all questions in the multiple-choice section of the paper. If they are unsure of the answer, students are advised to mark the response that is their 'best guess' for any question – it is always possible to change a response by carefully erasing and re-shading. Answering all questions also decreases the likelihood that further answers will be out of synchronisation.

This section of the paper was very well answered, with only five questions resulting in a correct response rate of less than 50 per cent. These questions, along with other moderately difficult ones, are discussed below.

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Brain and nervous system					
1	3	2	16	79	
2	10	53	22	13	Alternative B was a direct contradiction of the facts and the only incorrect alternative.
3	96	2	1	0	
4	2	47	1	50	Images falling on the left side of each retina are processed in the left occipital lobe and images falling on the right side of each retina are processed in the right occipital lobe. Almost half of the students chose the incorrect alternative B.
5	6	2	78	14	
6	8	85	3	3	
7	9	1	11	79	
8	70	19	8	3	
9	9	10	79	3	Although the correct alternative was the most popular response, many students indicated that alternative C, 'CT scans usually require an injection into the bloodstream', was false. In fact, the majority of cases an injection is required, although it is not of a radioactive isotope in a vehicle of fluorodeoxyglucose, as is the case with a PET scan.
10	41	16	38	4	
11	6	9	14	70	
12	12	3	2	82	
13	3	96	0	1	
14	85	12	2	1	
15	53	3	2	42	In establishing the baseline for the polygraph, both neutral and emotional questions are used. These include 'probable lie' questions and questions requiring both 'yes' and 'no' responses.
16	5	65	19	11	
17	59	14	13	14	
18	1	50	27	13	Students who indicated that the researcher should debrief the patient before carrying out the research showed a misunderstanding of the purpose and practice of debriefing.
Area of Study 2 – Visual perception					
19	8	82	5	5	
20	3	2	94	1	
21	8	88	0	3	
22	14	11	71	4	
23	76	5	12	8	
24	21	30	5	44	Brightness constancy clearly indicates that the answer must be alternative D. Over half of the students indicated difficulty with the concept of brightness constancy.
25	73	2	15	9	
26	12	17	66	6	
27	9	9	21	61	
28	5	91	1	2	
29	6	7	31	56	
30	9	5	74	12	
31	22	17	54	28	Whenever there is a bias in sample selection, the sample cannot be deemed random. In this case the researcher selected girls 'who were at school on the day of her study' – the girls who were not at school did not have an equal chance of inclusion in the sample.

Area of Study 3 – States of consciousness					
32	94	0	3	2	
33	11	77	7	5	
34	2	3	1	93	
35	23	73	1	3	
36	10	7	6	77	
37	7	9	75	9	
38	12	9	5	74	
39	33	11	17	28	28% of students indicated that dreams 'do not occur' during non-REM sleep. In fact, up to 10% of dreaming (usually of a bizarre and disjointed nature) may occur in NREM sleep.
40	29	57	9	5	
41	4	12	11	73	
42	2	5	91	1	
43	93	6	0	0	
44	2	82	7	8	

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Area of Study 1 – Brain and nervous system

This section was generally well-answered.

Question 1			
Marks	0	1	Average
%	22	78	0.8

To enable transfer of information between hemispheres.

Many answers incorrectly indicated that the corpus callosum sends information. This is incorrect – it acts as a conduit for neural impulses.

Question 2			
Marks	0	1	Average
%	35	32	33

- Value
- Case studies provide a detailed and complete (or near complete) description of one person's situation, experiences and evaluation of treatment, including background, family history and environment, through one-on-one interviews, individual testing, etc.
 - It can provide ideas for theoretical explanations and experimental research.

Limitation

- It is very difficult to generalise data to other people. Many case studies involve unique situations, large differences between brains or plasticity of the brain, etc.
- It is very difficult to analyse such a huge collection of data (intense and time consuming).

One mark was allocated to the value and one mark to the limitation. Any of the above items gained credit.

Question 3a.			
Marks	0	1	Average
%	55	45	0.5

Any one of the following:

- glucose
- fluorodeoxyglucose
- sugar
- ammonia

- water
- radioactive glucose
- carbon-11
- fluorine-18
- oxygen 15
- nitrogen-13.

Question 3b.

Marks	0	1	Average
%	28	72	0.7

Either of:

- it provides information about the levels of activity in different areas of the brain during the performance of these tasks
- it maps the areas of the brain that are involved during the performance of the task.

Statements that related only to 'brain function' simply repeated the information given in the question and did not gain the mark.

Question 3c.

Marks	0	1	Average
%	31	69	0.7

Any one of:

- CT
- (CAT)
- SPECT
- MRI
- fMRI.

BEG was not acceptable as the question specified an 'imaging device'.

Question 4a.

Marks	0	1	Average
%	34	66	0.7

Frontal lobe in the left hemisphere.

Both pieces of information were required. Students did not need to state that this is so more than 95 per cent of the time.

Question 4b.

Marks	0	1	2	Average
%	23	48	30	1.1

Any two of:

- produces very little speech
- speech requires much concentration and effort
- difficulty articulating speech (pronouncing words)
- speech tends to be slow and drawn out
- short words – prepositions/conjunctions tend to be omitted
- sentences tend to be very short (up to four words)
- sentences tend to be made up of verbs and nouns only
- words lack grammatical endings (for example, -ing).

A common error was to list two descriptors of the same difficulty; for example, speech is slurred and poorly articulated; or words are shortened and words lack grammatical endings. Such responses received only one mark.

Question 5a.

Marks	0	1	2	Average
%	4	24	72	1.7

- fight/fight response (fight or flight)
- parasympathetic

The response is referred to as the 'fight or flight' response. Even though Pauline was obviously not intending to fight the car, both terms are required in naming the response.

Question 5b.

Marks	0	1	2	Average
%	17	32	52	1.4

Any one of:

- inhibition of tear glands
- dilation of pupils
- dry mouth (inhibition of salivation)
- increased heart rate
- increased breathing (respiration) rate
- dilation of bronchial passages
- constriction of blood vessels in skin
- inhibition of stomach contractions, digestive secretions and peristalsis
- relaxation of bladder
- inhibition of erection/stimulation of ejaculation
- increased secretions by sweat glands
- goose bumps/hair follicles raised
- secretion of adrenal hormones (release of adrenaline and noradrenaline).

The explanation needed to indicate how the specific response named would improve Pauline's chances of survival. If the response and the explanation did not match, no mark could be awarded for part b.

Question 6a.

Marks	0	1	Average
%	11	89	0.9

Exhaustion

Question 6b.

Marks	0	1	2	Average
%	33	31	36	1.0

Any two of:

- anxiety
- depression/depression-like symptoms (for example, apathy or sadness)
- nightmares
- lack of appetite
- sexual dysfunction
- feelings of burnout
- irritability
- aggression
- feelings of losing (or out of) control/external locus of control
- difficulty concentrating
- flat affect – blunt emotive reactions, loss of empathy/understanding
- difficulty organising or prioritising tasks, or never feeling on top of tasks
- intrusive thoughts
- high emotionality.

It was important for two different psychological problems to be identified. Only one mark was given for 'depressed' and 'sad' or for 'anxious' and 'nervous'.

Marks	0	1	2	Average
%	32	39	29	1.0

Help

- The release of cortisol (a stress hormone) repairs the body and speeds up the healing process.
- The release of adrenaline (a stress hormone) and all the other symptoms of arousal maintain alertness and help the body to fight the stressor.

Harm

- These physiological strains have placed great pressure on the heart and led to the heart disease/heart attack.
- The body's immune system has been weakened by fighting the stress hormones, meaning that Suzanne cannot resist further infections. (The weakened body may be more prone to heart failure, so this was an acceptable alternative.)

It was not necessary for students to name the stress hormones, though students who named an inappropriate hormone did not gain the mark.

Area of Study 2 – Visual perception

This was the weakest of the three areas of study in the short answer section. The relatively poor result for Question 7 emphasises the need for students to apply their answers to the specific question asked rather than make a generic statement where they are required to apply a concept.

Marks	0	1	2	3	4	Average
%	8	19	30	20	23	2.3

Question 7

- Figure-ground: the number 1 is perceived as a meaningful unit, standing out from the background. We apply a subjective contour as an outline of the figure.
- Similarity: objects that are alike (the ticks) are perceived to form a meaningful whole unit (the figure 1).
- Closure: although the ticks are not connected, we perceive them as belonging to a single meaningful unit and apply closure to see the figure 1.

It was essential that the explanations referred to the figure shown and that the name and the explanation were congruent.

Marks	0	1	Average
%	46	54	0.6

Question 8a.

Accommodation

Marks	0	1	Average
%	34	66	0.7

Question 8b.

Closer to the horizon than the other clouds or lower in the picture than the other clouds.

Imprecise answers such as 'behind the other clouds' or 'at the bottom of the picture' did not earn marks.

Marks	0	1	2	Average
%	55	15	30	0.8

Question 9

- For example: in the rat-man experiment, subjects who are shown a group of line-drawings of faces including the ambiguous stimulus perceive it as an old man. Subjects who are shown a group of line-drawings of animals including the

- ambiguous stimulus perceive it as a rat. This means that the context had predisposed them to be prepared to perceive the stimulus in a particular way
- in Loftus and Mackworth's experiment with a picture of the giant squid outside the barn in a farmyard scene, the unexpectedness of the squid in that environment (context) meant that subjects focussed their attention on the squid and did not notice other details.

Many answers were generic, simply describing context as creating perceptual set. Some examples given did not relate to visual perception – therefore did not relate to this Area of Study.

Question 10a.

Marks	0	1	2	Average
%	39	7	54	1.2

- shape
- size

No other terms were acceptable. The order in which the terms were stated was of key importance.

Question 10b.

Marks	0	1	2	3	Average
%	21	27	37	14	1.5

- As a person crosses the room they approach or get further away from the viewer. As the size of the retinal image changes (or the distance from the viewer changes), the viewer perceives the person to grow or shrink in size.
- The room is constructed in a trapezoidal shape so that one back corner is twice as far from the viewer as the other back corner.
- Cues in the room, such as windows or clocks, are also distorted to give the impression that they are being viewed from a 90 degree angle.
- Viewing through a peephole – eliminating the strongest (binocular) depth cues and using only monocular pictorial cues – intensifies the illusion.

Students needed to give a description of the structural features (design) of the room and state that the illusion of changing size is brought about by varying distance. Referring to the size of the retinal image was useful but not required.

Question 11

Marks	0	1	Average
%	29	71	0.7

Either of:

- to protect the rights and welfare of participants (no harm principle)
- to promote research of benefit to the community/humankind (maximise beneficence).

Many answers concentrated on explaining why 'national' guidelines are important. The question referred to the overriding principles that are stated in the NHMRC guidelines.

Area of Study 3 – States of consciousness

Students appeared to have a reasonable knowledge of this Area of Study, although some students needed to take greater care to answer the questions properly. For example, Question 12 required the name or description of an altered state of consciousness and two psychological characteristics that would distinguish this state from normal waking consciousness. Students had to identify characteristics that were appropriate to the altered state that they had nominated.

Question 12

Marks	0	1	2	3	Average
%	12	19	26	43	2.0

Sleep/dreaming/daydreaming

- thought patterns are disorganised
- distorted perception of time

- lack of control of movements
 - sensations and perceptions are dulled
- Meditation
- sensations or perceptions are dulled (for example, pain)
 - distorted perception of time
 - awareness of external environment is reduced

Hypnosis

- distorted perception of time
- sensations or perceptions are dulled (for example, pain)
- loss of awareness of self
- can increase self control (for example, quitting smoking)
- more suggestible, so less inhibited

From drug use

- thought processes are disorganised
- sensations or perceptions are dulled or heightened
- memory impaired
- more/less/inappropriate emotional reactions
- distorted perception of time
- lack of self control

Heightened awareness

- hyperfocus (selective attention)
- distorted perception of time
- extra sensitive perceptions

Question 13

Marks	0	1	2	Average
%	35	36	29	1.0

His GSR reading will be higher than in a normal state. Increased sweat on the skin increases the electrical conductivity of the skin's surface, so the galvanometer will register a higher reading.

Many students answered the question as if they were referring to any altered state of consciousness, disregarding the fact that the question specified 'heightened arousal'.

Question 14

Marks	0	1	2	3	Average
%	11	29	37	23	1.7

EEG (electroencephalograph)

- Measure: Detects, amplifies and records electrical activity of the brain in the form of brainwaves.
- Explanation: NREM sleep is indicated by higher amplitude and lower frequency brainwaves, whereas REM sleep is indicated by lower amplitude and higher frequency brainwaves.

EOG (electro-oculograph)

- Measure: Detects, amplifies and records electrical activity of the muscles near the eye.
- Explanation: A high level of electrical activity indicates REM sleep. A low level of electrical activity indicates NREM sleep

EMG (electromyograph)

- Measure: Detects, amplifies and records electrical activity of the muscles in the body.
- Explanation: Very little or no activity indicates REM sleep. An increase in activity indicates NREM sleep.

Video camera

- Measure: Detects and records movements of the body, or eye movements.

- Explanation: Eye movement indicates REM sleep; no eye-movement indicates NREM sleep. Very little, or no, movement indicates REM sleep. An increase in movement indicates NREM sleep.

It was essential for students to refer to the fact that the 'electro-' devices measure electrical activity; they do not directly measure brain activity or muscle movement.

The EOG detects, amplifies and records electrical activity in muscles near the eye, orbital muscles or muscles responsible for eye movement. 'Muscles in the eye' or 'muscles of the eye' were not acceptable responses.

Question 15a.

Marks	0	1	Average
%	57	43	0.5

Temporary, involuntary cessation of breathing during sleep, for 20 seconds to two minutes.

Simply stating that 'the sleeper stops breathing for a period of time' was not adequate; irregularity of the breathing pattern may be part of normal sleep. It is the cessation of breathing that defines sleep apnoea, the accompanying snoring or waking gasping for breath are the possible results of the apnoea.

Question 15b.

Marks	0	1	2	Average
%	59	30	11	0.5

Any two of:

- breathing stops because the autonomic nervous system does not signal the body to breathe
- swelling of soft tissue in the upper throat constricts the airways
- certain illnesses (mumps, tonsillitis, etc.) causing blockage of the airways
- malformation of the jaw or trachea causing restricted air flow
- being overweight may contribute to fatty tissue blocking airways
- drinking too much alcohol leads to a build up of fatty tissue that can block airways.

A single word such as 'obesity' or 'alcoholism' was not considered to be an adequate identification of a possible cause.

Question 16a.

Marks	0	1	2	Average
%	39	23	37	1.0

Name: placebo effect/participant expectations/Hawthorne effect

Definition: Participant expectations (or the placebo/Hawthorne effect) will influence individuals' behaviour, meaning that the independent variable will not be the only variable influencing the value of the dependent variable.

Many students did not achieve marks for this question because they answered as if the participants were unaware of the group to which they had been allocated.

Question 16b.

Marks	0	1	Average
%	73	27	0.3

Deception is allowed when:

- the research proposal has been approved by the ethics committee of the research institution
- the value of the research is such that the deception is warranted
- appropriate debriefing and counselling procedures are in place to ensure there is no lasting psychological or physiological harm to participants.

It is strongly suggested that the role of ethics committees of research institutions is discussed in the course of Unit 3, as these are the bodies responsible for ensuring that the NHMRC ethical guidelines and the National Privacy Principles are universally and consistently applied.

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

Victorian Certificate of Education

2007

STUDENT NUMBER

Figures					
Words					

Letter

PSYCHOLOGY

Written examination 2

Thursday 8 November 2007

Reading time: 9.00 am to 9.15 am (15 minutes)
Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	44	44	44
B	19	19	46
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 18 pages.
- Answer sheet for multiple-choice questions.

Instructions

- Write your student number in the space provided above on this page.
- Check that your name and student number as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer all questions in pencil on the answer sheet provided for multiple-choice questions. Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

AREA OF STUDY 1 – MEMORY

Question 1

Sam is able to retain the vocabulary he learned in his French class long after the class has ended. The main memory process that accounts for the fact that Sam can hold information in his memory for extended periods of time is

- encoding.
- retrieval.
- chunking.
- storage.

Question 2

When Jane was 19 she completed the first two units of a German language course. Ten years later, she began the course again and found that she learned the material in the first two units 25% more quickly than she did originally.

This is probably because

- relearning is the most sensitive measure of memory.
- the savings score could be calculated.
- the material in the first two units was the easiest.
- she was older and therefore her memory worked better.

Question 3

Which of the following is the least sensitive measure of memory retention?

- free recall
- recognition
- relearning
- cued recall

Question 4

Iconic memory has

- an unlimited capacity and an unlimited duration.
- a limited capacity and very brief duration.
- an unlimited capacity and very brief duration.
- a limited capacity and an unlimited duration.

Question 5

When watching a film, you are able to perceive the film as a continuous picture rather than a sequence of still frames moving quickly.

This is because of

- A. the phonological loop.
- B. echoic memory.
- C. the visuospatial sketchpad.
- D. iconic memory.

Question 6

Peter saw an advertisement on the television. The phone number for further information flashed on the television screen but disappeared before Peter was able to write down the last three digits. However, Peter found he had a momentary mental image of the phone number and he was able to write the complete number.

Peter's experience best illustrates

- A. cued recall.
- B. sensory memory.
- C. procedural memory.
- D. a flashbulb memory.

Question 7

Sensory memory includes

- A. eidetic memory and episodic memory.
- B. tactile memory and semantic memory.
- C. echoic memory and verbal working memory.
- D. iconic memory and echoic memory.

Question 8

According to the consolidation theory, new memories of an event form

- A. only within 30 minutes after the event.
- B. if the person pays attention to the event.
- C. when physical changes to the neurons occur during and after the event.
- D. when there is physical harm to the brain after the event.

Question 9

One way of making it easier to remember nine numbers is to consider the numbers as consisting of three groups of three; such as: 378 – 291 – 754.

In memory research, this process is called

- A. dividing.
- B. grouping.
- C. clumping.
- D. chunking.

Question 10

When you listen to a lecture, the information is held in _____ memory until you write it in your notes.

- A. trace
- B. iconic
- C. short-term
- D. long-term

Question 11

The component of working memory that allows visual images to be held temporarily is known as

- A. iconic memory.
- B. echoic memory.
- C. the phonological loop.
- D. the visuospatial sketchpad.

Question 12

A theory that attempts to describe and explain how information is arranged in long-term memory is called the

- A. spreading activation theory.
- B. semantic network theory.
- C. consolidation theory.
- D. serial position effect.

Question 13

John is explaining the rules of his new computer game to Shane.

The information about rules is being retrieved from John's

- A. episodic memory.
- B. declarative memory.
- C. procedural memory.
- D. implicit memory.

Question 14

Sinead listened to a list of 20 words. She was asked to recall the list 10 minutes later.

Sinead was more likely to remember items from

- A. both the beginning and end of the list.
- B. the middle of the list.
- C. only the beginning of the list.
- D. only the end of the list.

Question 15

According to the theory of motivated forgetting, memories that are forgotten

- A. may be accessed at a later date as the memory still exists.
- B. are lost forever because the memory trace no longer exists.
- C. are lost forever because happier memories have taken their place.
- D. may be accessed whenever the person is asked to remember the event.

Question 16

According to the decay theory, memories are forgotten because

- A. neurotransmitters slowly destroy the memory.
- B. of old age.
- C. the physical trace of the memory has faded due to disuse.
- D. the memory was never consolidated in the first place.

Question 17

Last month you moved into a new house and memorised your new phone number. Now you cannot remember your old phone number.

This is an example of

- A. retroactive interference.
- B. proactive interference.
- C. retrograde amnesia.
- D. motivated forgetting.

Question 18

It is 10.00 pm the night before a morning examination. You have studied well.

The best thing to do now is to

- A. study a similar topic.
- B. study a very different topic.
- C. watch a movie.
- D. sleep all night.

Question 19

Which of the following is **not** an explanation for forgetting material?

- A. inability to find the right retrieval cues
- B. interference from other information
- C. motivation to forget painful information
- D. being in the same emotional state as when the material was learnt

Question 20

When a person loses memories of an upsetting personal experience, it is most likely the result of

- A. inhibition.
- B. repression.
- C. cue-dependent forgetting.
- D. a decision not to store the memory, as it is painful.

Question 21

Maurice is a healthy 80 year old who is not suffering from brain disease or injury.

As Maurice gets older, he is

- A. unlikely to experience large memory losses.
- B. likely to perform more poorly on recognition tests.
- C. unlikely to learn new material.
- D. likely to forget some procedural memories only.

Question 22

A psychologist tests memory recall under two different conditions.

A test of significance finds that $p > 0.05$.

This means that there is a

- A. less than 5 in 100 chance that the results are due to chance.
- B. greater than 5 in 100 chance that the results are due to chance.
- C. less than 5% difference between the results of the two conditions tested.
- D. greater than 5% difference between the results of the two conditions tested.

AREA OF STUDY 3 – RESEARCH INVESTIGATION

Read the following research study. All the questions which follow relate to this study. Answer all questions.

Denise, an educational psychologist, was interested in studying the effects of different types of distractors on the performance of students. Denise worked at Beechside Secondary College, a coeducational secondary school.

[illegible]

Denise randomly selected 20 VCE students at her school, ensuring that the year level and gender of the students comprise 60% males and 40% females, aged between 16 and 18 years.

Denise used three research assistants to help conduct the experiment. In the first trial, the first research assistant were in the same proportion as in the school population of VCL students. Denise counted the number of students who were in the same proportion as in the school population of VCL students. Denise counted the number of students who were in the same proportion as in the school population of VCL students.

In the second trial, the second research assistant gave participants a different logic puzzle of similar difficulty gave participants a logic puzzle to complete with no background instruction. The second research assistant indicated when to complete it while loud instrumental music was played.

In the third trial, the third research assistant gave participants a third logic puzzle of similar difficulty to the first and asked them to complete it while loud instrumental music was played.

Each research assistant recorded the time taken to complete the puzzle in the trials, but they were unaware of the other conditions and the hypothesis.

The following results were obtained.

Table 1 Mean times taken to complete the puzzle ($n = 20$)

Trial 1 No background noise	13.40 min
Trial 2 Loud instrumental music	16.01 min
Trial 3 Loud verbal conversation	18.36 min

Denise set the level of significance at 0.05.

Denise calculated a p value less than 0.05 for her study.

Question 11

Write an appropriate operational hypothesis for this research study.

2 marks

Question 12

Name the independent variable and the dependent variable in this research study.

Independent variable:

Dependent variable

2 marks

Question 13

Denise randomly selected participants from different strata to obtain her sample. Describe in detail a procedure that Denise may have used to obtain her sample.

Question 14

a. Name the research design that Denise used in this research study.

b. What is the main advantage of using this research design?

Question 15

Denise used three different research assistants to conduct the experiment and record the results. Name and describe the confounding variable Denise was trying to avoid by doing this.

Name: _____

Description

2 marks

Question 16

State one possible confounding variable caused by this research design and explain how it could be avoided in the future.

2 marks

Question 17

Denise concluded that student concentration is most negatively affected by background noise that contains verbal sounds.

In terms of **statistical significance**, is this a valid conclusion to make? Give reasons for your answer.

2 marks

Question 18

Denise followed ethical guidelines, including obtaining informed consent. In this case, describe how Denise could have obtained informed consent.

2 marks

Question 19

Another researcher attempts to repeat this study at a different school. Why is it important to attempt to repeat psychological research studies?

1 mark

END OF QUESTION AND ANSWER BOOK

2007 Assessment Report

2007

Psychology GA 3: Written examination

GENERAL COMMENTS

Overall performance on the November 2007 paper was very comparable to November 2006. While the Multiple-choice responses showed an improvement, there were some weak responses in the short answer section.

As in 2005 and 2006, but in contrast to previous years, the 'Learning' section yielded the highest average score in the Short answer section (mean 52% correct), with 'Memory' (47%) and 'Research Methods' (48%) being very similar. In the Multiple-choice section, scores for Memory (73% correct) and 'Learning' (75%) were very similar and both slightly superior to the 2006 averages.

It is noted that in this examination a total of 450 lines were left blank on the students' multiple-choice answer sheets. This is half the number for November 2006 and indicates a positive trend. Students are strongly encouraged to respond to each question. Not only is it impossible to achieve a mark where no response is given, but also there is a possibility that later answers on the computer-scored sheet will be out of synchronisation and further marks may be lost. If unsure, students are again advised to mark the response that is their 'best guess' for any question. It is always possible to change a response later by carefully erasing and re-shading.

In the Short answer section, problems again arose in terms of failure to address **command terms** in questions, or failure to relate the answers to the scenario described in the question. Students appeared to have some difficulty interpreting questions and often did not gain marks due to a lack of precision in their responses. In each of the first two Areas of Study, the mean score on the Multiple-choice section was substantially superior to the mean score on the equivalent Short answer section.

Marking Issues

As in previous examinations, a two-mark question required two pieces of information; for example, Question 2 of Area of Study 1 and Questions 13 and 16 of Area of Study 3. One mark was given for each part and an answer that failed to address both parts did not achieve full marks. Most questions requiring two parts to an answer in this examination had two separate response spaces in the answer booklet.

This examination contained several questions in which students were required to answer with respect to a **certain theory, context or scenario**. This applied to Questions 1, 2, 4, 5, 6, 7 and 8b in the first two Areas of Study. Similarly, all questions in Area of Study 3 needed to be answered with reference to the research study described, as stated in the instructions on the examination paper. Generic answers did not show a clear understanding of the question and could not gain full marks.

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	Comments
Area of Study 1 – Memory					
1	18	2	2	78	
2	92	8	0	0	
3	83	8	3	6	
4	2	19	76	3	
5	6	2	28	64	Option C (visuo-spatial sketchpad) refers to working memory, not to sensory memory and so is incorrect. This distinction needs to be well understood.
6	11	76	3	10	
7	1	1	1	96	
8	24	11	53	1	Research published in 2007 indicates that full consolidation of episodic memory requires a phase of REM sleep. Therefore option A is incorrect.
9	0	2	1	97	
10	1	2	96	1	
11	22	2	2	74	
12	1	89	7	3	
13	6	33	48	2	This question required a response that showed the type of memory in which knowledge of the rules of a game would be stored. This can only be in declarative (semantic) memory. Knowledge of 'how' to play the game in terms of the physical activity would be in procedural memory. Those who chose option C failed to see this.
14	64	1	50	5	Students who chose option A showed a lack of understanding of the causes and the contributions of Primacy Effect and Recency Effect to the phenomenon of Serial Position Effect. After such a delay, no items would be stored in short-term memory so that Recency Effect would not occur.
15	66	12	4	18	
16	3	3	93	2	
17	73	23	2	2	
18	4	6	1	89	
19	4	3	4	89	
20	2	90	4	4	
21	46	20	21	13	This question shows that the effect of ageing on memory in healthy individuals is poorly understood. Memory does not necessarily decline, and elderly people can perform as well as they ever did on tests of recognition. Apparent decline in memory is considered more likely to be the effect of declining confidence in memory or a decline in motivation to learn.
22	23	63	6	9	
Area of Study 2 – Learning					
23	2	1	7	90	
24	14	2	80	4	
25	71	11	14	4	
26	3	89	7	1	
27	94	4	2	0	
28	2	1	93	5	
29	6	4	1	89	

Question	% A	% B	% C	% D	Comments
30	2	2	93	1	
31	3	15	8	74	
32	81	8	10	1	The phrase 'without pauses' automatically disqualifies the two most popular incorrect options (A and C), each of which has been demonstrated to encourage increased response rate as the time (or trial) for reinforcement approaches.
33	29	11	41	19	It is important to read the whole question carefully and consider each of the alternative responses with equal care. The latter part of option A is a definition of Negative Reinforcement. Option C is wrong because of the phrase 'while providing an alternative response'. Many instances of punishment do not provide an alternative response. Option D is an accurate statement about punishment in general.
34	23	1	38	38	Both Variable Interval and Variable Ratio schedules of reinforcement are more resistant to extinction than Fixed Interval and Fixed Ratio schedules.
35	77	20	2	1	
36	2	76	2	19	
37	29	68	1	3	
38	17	3	43	37	Option D is the only option available that seeks to promote a particular behaviour by removing an unpleasant stimulus. Option C will remove the unpleasant consequence (of failing) but there is no indication that 'taking an examination' is a desired behaviour to be reinforced.
39	10	71	8	11	This question should have been among the easiest on the paper as it simply asked for a fact and required no interpretation or understanding. It is documented that, when rewarded for the behaviour themselves, children would be aggressive towards the doll even if they had seen the model punished for aggressive behaviour.
40	63	35	1	0	This question also asked for facts and required no interpretation or understanding. Boys showed more aggression than girls in all cases (option A).
41	52	2	7	39	The context of the previous two questions may have persuaded students to choose option B, which was incorrect. This question shows the importance of considering the A-B-C model proposed by Skinner describing operant conditioning: 'A' refers to the antecedent stimulus (Jamie's father coming home in a good mood), leading to the 'B' (or behaviour) (asking to borrow the car) followed by the 'C' (or consequence) (getting permission to use the car). Jamie's behaviour is as a result of stimulus discrimination (being able to differentiate his father's moods).
42	5	55	53	3	
43	0	4	2	94	
44	93	3	1	3	

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

2007 Assessment Report

Area of Study 1 – Memory

Question 1

Marks	0	1	2	Average
%	60	24	16	0.6

She would picture (visualise) each of the endangered Australian animals placed at a certain significant location on a well-known journey. For example, a rock wallaby at her front door and a tree kangaroo climbing on the gate. When giving the talk, she would take the journey in her mind and as she imagined each of the locations, it would form a cue to enable her to remember the associated animal. Note that the use of a familiar room as the cue to help visualise the animals in a sequence of locations in the classroom is also appropriate.

Many students did not gain full marks on this question because they failed to answer the question using the 'Method of Loci' as required. This method is a technique that requires visualisation. Full marks were achieved only by students who referred to the scenario described in the question (endangered Australian animals) and indicated the two processes of improving encoding and storage by visualisation and using the familiar images to cue recall when required.

Question 2

Marks	0	1	2	3	4	Average
%	33	10	22	10	24	1.8

The 'central executive' is responsible for:

- integrating information from the phonological loop and visuo-spatial sketchpad; for example, in reading where a word is identified and sounded
- communicating with long-term memory in terms of retrieving information required; for example, when multiplying 7×43 . This requires access to the seven times table from long-term memory
- communicating with long-term memory in terms of assigning meaning in order to commit material to long-term memory
- planning a course of action to solve a problem; for example, deciding how to open a door when one has one's hands full of shopping bags
- deciding which items require attention and which are to be ignored; for example, picking out relevant stimuli when searching a location in a street-directory.

One mark was awarded for an accurate statement of the role and one mark for citing an appropriate example. In order to obtain the second mark it was necessary for the example to match the role that had been identified. Many students lost marks by incorrectly stating that the central executive has a storage function.

Question 3

Marks	0	1	Average
%	41	59	0.6

'Organic cause' refers to a physiological (biological) reason for memory loss. This may be a physical trauma or fading of the memory trace through decay when the memory is not revisited over time.

To obtain the mark it was necessary for students to identify the physiological/physical/biological (health)/chemical trauma or damage to the brain or for decay of the memory trace. Many students erroneously stated that an organic cause of forgetting meant 'natural'; that is, 'not due to any external influences'.

Question 4a.

Marks	0	1	Average
%	17	83	0.9

Retrograde amnesia

This question was reasonably well answered. The most common errors included using the term 'retro-active' to describe amnesia, or wrongly identifying this as 'anterograde amnesia'.

Question 4b.

Marks	0	1	2	Average
%	40	43	18	0.8

A typical pattern of recovery of Haydn's memory could be:

- a gradual shortening of the period of memory loss (the fact that he would usually remember the most distant events first is correct but was not required in answers)
- he is likely to permanently forget events immediately prior to the accident
- different aspects of memory recover at different rates, for example, episodic faster than semantic
- a gradual increase in the rate of recovery as newly rediscovered memories cue (or trigger) recall of other items from the semantic network
- possible initial rapid recovery then slower (or sporadic) recovery.

One mark was awarded for each of the above points, to a maximum of two marks.

Question 5

Marks	0	1	2	Average
%	25	51	24	1.0

- Constable Phillips is relying on context dependent cues to assist recall by the witnesses (cued recall is more sensitive than free recall).
- The more closely retrieval cues match the external environment (physical context) in which learning occurred (the location where they saw the fight), the greater the chance of recalling the details of the fight.

Each of the above points was required to earn full marks. An otherwise correct answer that did not refer to the scenario given (a fight at the football) did not gain full marks.

Question 6

Marks	0	1	2	Average
%	31	28	41	1.1

- The greatest rate of forgetting would occur immediately after learning.
- After about eight hours, memory loss would slow to a steady decline and after a few days, little or no more forgetting would occur.

One mark was awarded for each of the above points.

In general it is very important for quantified amounts to be reported accurately. In this case, however, the items are strings of numbers and mnemonics such as chunking will mean that we could not predict the values on the curve accurately – in this case, therefore, descriptive terms were acceptable. Students who used Ebbinghaus' figures were given full credit.

Area of Study 2 – Learning

Question 7

Marks	0	1	2	3	4	Average
%	10	16	34	21	20	2.3

7i. Pain from the needle (pain)

7ii. Approach of nurse (nurse/sight of approaching nurse)

7iii. Fear of pain from injection (scream because of pain)

7iv. Fear of nurse (scream at approach of nurse)

In previous assessment reports it has been emphasised that it is necessary to distinguish between the unconditioned response and the conditioned response. Therefore, in parts iii. and iv., responses were required to be differentiated by identifying the origin as in 'fear from the pain of the injection' and 'fear due to the approach of the nurse'.

Question 8a.

Marks	0	1	Average
%	60	40	0.4

In observational learning we learn through observing the consequences of others' behaviours, whether they are reinforced or punished. Learning in which behaviour becomes controlled by its consequences is called operant conditioning.

Reference to vicarious learning, though correct, was not required.

Question 8b.

Marks	0	1	2	3	4	5	Average
%	19	19	19	18	16	10	2.3

- **Attention:** Her daughter should actively watch when Jodie is cooking. Jodie should point out her actions.
- **Retention:** The daughter must remember the actions that Jodie performed in her cooking, especially by doing a step at a time.
- **Reproduction:** Her daughter must have the ability to perform the cooking. It must not be too complex for her.
- **Motivation:** The daughter must want to cook. Jodie should encourage her to repeat the cooking behaviour she has seen.
- **Reinforcement:** When her daughter cooks something, Jodie should praise her to encourage her to cook again.

The wording of the question required that each step should be clearly linked to the cooking scenario. Due to the wording, use of the terms highlighted in the sample response above was not required.

It is emphasised that the use of the term **reinforcement** in the sequence of the steps in observational learning is not entirely consistent with the correct usage of the term as an element of operant conditioning. Students should be aware that the names of the steps are simply used as cue-words to help remember the process.

Question 9

Marks	0	1	Average
%	14	86	0.9

Thorndike called it:

- trial and error learning
- instrumental conditioning.

Question 10

Marks	0	1	2	3	Average
%	28	19	22	31	1.6

Similarities

- Taste aversion and classical conditioning both involve the pairing of the unconditioned stimulus with the conditioned stimulus to elicit a conditioned response.
- Both taste aversion and classical conditioning involve reflexive responses.
- In both taste aversion and classical conditioning the learner is passive.

Differences

- It takes only one pairing of the unconditioned stimulus with the conditioned stimulus to elicit a long lasting conditioned response in taste aversion, whereas in classical conditioning it usually takes repeated pairings.
- In classical conditioning, both the conditioned and unconditioned stimuli are contemporaneous. In taste aversion there is a long delay between the conditioned stimulus (sight/smell/taste of the food) and the effective unconditioned stimulus (bacteria in the bloodstream).
- There is a large time lapse between the unconditioned stimulus and unconditioned response in taste aversion, whereas in classical conditioning there is a short period of time between the unconditioned stimulus and the unconditioned response.
- The learning response is more difficult to extinguish in taste aversion as compared to classical conditioning.
- The conditioned response (dislike of the taste/food) is much stronger in taste aversion than in classical conditioning.

- It is less likely that the conditioned stimulus will be generalised to other similar stimuli in taste aversion, as compared to classical conditioning.

Any of the above points achieved one mark. Students needed to provide one similarity (for one mark) and two differences (for two marks).

Area of Study 3 – Research Investigation

Question 11

Marks	0	1	2	Average
%	46	39	14	0.7

A stated prediction of the outcome of the experiment includes:

- a statement of the population
- a statement of the independent variable
- a statement of the dependent variable
- operationalisation of the dependent variable.

A correct response necessarily included appropriate operationalisation of the dependent variable and a statement of the population, independent variable and dependent variable. For example, 'For VCE students, listening to loud music, loud conversation or no background noise will affect concentration, operationalised as the time taken to complete a logic puzzle'.

It is worth repeating the comment from the November 2006 assessment report: 'This question was poorly answered. Students needed to demonstrate their understanding of the concept of operationalisation and their understanding that a hypothesis is a statement of the predicted effect of a change in the Independent Variable on the value of the Dependent Variable.'

Some students are still erroneously saying that a hypothesis can be expressed as a question. This is not correct.

Question 12

Marks	0	1	2	Average
%	23	31	46	1.2

Independent variable

- whether the participants listen to no background noise, loud instrumental music or a loud verbal conversation while completing a logic puzzle
- the level and type of noise participants were exposed to

Dependent variable

- the level of concentration (operationalised as the time taken to complete the logic puzzle)

As the second part of the question was worth only one mark, either 'concentration' or 'time taken to complete the logic puzzle' was accepted, although neither alternative strictly justifies a complete answer.

Question 13

Marks	0	1	2	3	Average
%	35	29	25	11	1.1

A procedure that may have been used to obtain the sample could be:

- placing the name of each person in the population into the appropriate category of age and gender
- deciding on the size of the sample to be used and calculating the number of participants required to form the same proportions of each cohort in the sample as found in the population
- selecting participants at random using a random number generator or table or other appropriate method (such as drawing names from a hat) so that each person has the same chance of being selected as the others in the stratum.

All three points above were required in order to gain full marks.

Question 14a.

Marks	0	1	Average
%	48	52	0.5

Any of:

- repeated measures design
- within subjects design
- within participants design.

Question 14b.

Marks	0	1	Average
%	68	32	0.3

A main advantage of using this research design is (either of):

- it eliminates the effects of participant variables
- it controls participant variables (by using the same participants in the control and experimental conditions).

Question 15

Marks	0	1	2	Average
%	33	16	51	1.2

Name

- experimenter effect
- experimenter bias

Description

- the influence or bias of the experimenter may affect the data and influence the results

One mark was awarded for each of the above responses.

Question 16

Marks	0	1	2	Average
%	60	22	18	0.6

A confounding variable could be any one of:

- order effect
- practice(learning) effect
- boredom effect.

The researcher should have included counterbalancing in her research design, where the order of the conditions was varied for each third of the participants. For example, in conditions a, b and c they could be arranged in any of the following orders: abc, acb, bac, bca, cab or cba.

One mark was awarded for each of the above responses.

Question 17

Marks	0	1	2	Average
%	25	35	42	1.2

Yes, this is a valid conclusion to make. The level of significance was set at 0.05 and Denise calculated a p value less than 0.05 for her study. This meant that the probability was less than 5 in 100 (5 per cent, or 1 in 20) that her results were due to chance.

The question emphasised a response in terms of statistical significance. Confounds due to sampling errors or to experimental procedures are therefore not relevant here.

Question 18

Marks	0	1	2	Average
%	18	46	36	1.2

Students needed to comment on both 'informed' and 'consent'.

Informed

Parents and students are given detailed information about:

- process and intent of the research
- the rights of the participants
- any risks involved.

Consent

Participants and their parents then agree that the students may take part in the study.

Since participants in this study are under 18 years old, a correct answer needed to refer to the consent of parents.

Question 19

Marks	0	1	Average
%	29	71	0.7

It is important to repeat this study at another school to:

- determine if the results can be generalised to a different population
- check earlier results (importance of arriving at statistical significance)
- make results more robust
- test the validity of the results.